

The following is general information for those involved in the use of human cells/tissue/blood.  
Contact [occupational.health@cuanschutz.edu](mailto:occupational.health@cuanschutz.edu) if you have any questions.

## **POTENTIAL RISKS**



Human cells, tissues, blood, and other potentially infectious materials derived from humans can contain bloodborne pathogens and other agents. Working with blood/tissues/cells carries a risk of infection if they are not handled with care. If you have an immune-compromising medical condition or you are taking medications that impair your immune system (steroids, immunosuppressive drugs, or chemotherapy), you are at higher risk for contracting these diseases.

### **Potential for Infections**

#### **Infectious materials**

- Any human body fluids such as: blood, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, semen, vaginal secretions, amniotic fluid, breast milk, and other fluids containing visible blood, unfixed organs, tissues, or body parts
- Transmission
  - Sharps injury, needlestick, cut, etc.
  - Splash onto a mucous membrane such as the eyes, mouth, or nose. Can also be transmitted through contact with broken skin including acne, clusters cuts, chapped or scraped skin, or sunburn

#### **Bloodborne Pathogens (BBP)**

- Infectious microorganisms that may be present in human blood and other potentially infectious materials (OPIM)
- Pathogens include: human immunodeficiency virus (HIV), Hepatitis B and C

#### **Human Immunodeficiency Virus (HIV)**

- The virus that causes AIDS (acquired immune deficiency syndrome).
- HIV is a virus that destroys the cells of the human immune system
- Transmission
  - Person to person through contact with body fluids
- Symptoms start within the first few weeks of infection and disappear soon after
  - Flu-like symptoms, fever, headache, and fatigue

#### **Hepatitis B and C**

- Viral diseases that cause inflammation of the liver, and can lead to diseases such as cirrhosis and cancer
- **Hepatitis B (HBV)**
  - Symptoms
    - Dark urine, light stools, jaundice, fatigue, fever, and flu-like symptoms
  - May dry and live on surfaces for one week or more
  - Can be prevented by vaccine, although there is no cure
- **Hepatitis C (HCV)**
  - Symptoms
    - Dark urine, light stools, jaundice, lack of appetite, fatigue, fever, and flu-like symptoms
  - People with chronic HCV may have no symptoms and live with an infection and not feel sick.
  - Can survive on dry surfaces and equipment for up to 6 weeks
  - There is no vaccine or cure, prevention is the only safeguard

#### **Other diseases associated with human cells/tissues/blood**

- Cytomegalovirus (CMV)
  - Common virus transmitted through human body fluids, such as blood saliva, and urine
  - Does not cause symptoms in most people
  - Once infected you remain infected for life
  - Can be hazardous during pregnancy and cause complications for an unborn child. Especially if infection occurs while pregnant
- Human Papillomavirus (HPV)
  - DNA virus that infects the skin and mucous membranes
  - Can cause warts, or have no symptoms
  - Persistent infection with some HPVs may progress to precancerous lesions and invasive cancer
- Epstein Barr virus (EBV)
  - Can cause infectious mononucleosis, with symptoms of sore throat, fever, and swollen lymph glands. Can be asymptomatic
  - Symptoms resolve although EBV can remain latent in cells for life

# **HOW TO PROTECT YOURSELF**



## **Annual required Bloodborne Pathogens training**

- Required for those at risk of exposure to infectious agents or materials, bloodborne pathogens, or human blood/tissue/cell culture/recombinant DNA, either in lab or clinic
- Access training through [Skillsoft](#)

## **Wash your hands**

- Single most effective preventative measure
- Wash your hands with soap and water any time:
  - Your hands are soiled with blood, mucous, tissues, or other debris
  - Before putting gloves on
  - After removing gloves
  - After using the restroom
  - Before eating and drinking

## **Wear eye and face protection**

- Eyes and mucous membranes are points of entry for BBPs
- In addition to lab coat and gloves, face protection is important to protect from potential exposure to BBPs
- Eye protection such as safety glasses or goggles should be worn at all times

## **Wear gloves**

- Always wear gloves and discard them after each use
  - Never reuse or wash gloves
- Don't touch unprotected skin, your clothing, or any environmental surfaces with contaminated gloves
- Remove gloves and wash hands before leaving the laboratory and before touching door handles, sink handles, or elevator buttons
- Gloves made of latex or nitrile can protect hands from contact with contamination but will not protect you from needles or other sharps

## **Wear protective clothing**

- Protective clothing keeps blood and OPIM off of your personal or work clothing
- Wear suits or coveralls when splashing with contaminated liquid is anticipated

- Consider changing clothing before leaving work
  - Place dirty clothing in a bag and launder clothes at home before wearing them again
- If your clothes are splashed with potentially contaminated liquid remove them as soon as possible
  - Keep separate from other clothing and launder thoroughly

## **Follow proper exposure reporting protocols**

- If you are injured on the job, promptly report the incident to your supervisor
  - [Immediately call or email Occupational Health \(303\) 724-9145 during business hours](tel:(303)724-9145)
  - Outside of normal hours seek medical attention at emergency department or other healthcare provider
- Fill out incident report for exposure to biological hazards
- File a claim with University Risk Management
  - <https://www.cu.edu/risk/file-claim>
- Minor cuts and abrasions should be immediately cleansed with antibacterial soap
  - Protect injuries from exposure

## **Tell your physician you work with human cells, blood, or tissues**

- Whenever you are ill, mention to your physician that you work with human cells, blood, and/or tissues
- Many infections have flu-like symptoms and it is important to seek a proper medical diagnosis if you believe you have been exposed at work

## **Additional Resources**

- [Bloodborne Pathogens Exposure Control Plan](#)
- [Bloodborne Pathogens, Exposure Control, and Hepatitis B Vaccination Policy](#)

For more information, refer to the  
**Occupational Health website**  
<https://research.cuanschutz.edu/ehs/home/divisions/occupational-health>



or contact Occupational Health at  
[occupational.health@cuanschutz.edu](mailto:occupational.health@cuanschutz.edu)